

Diabetes: An Issue for My Community

Student Overview Presentation

Helen Mora and Jacquie Bay

February 2011

LENScience Diabetes © Liggins Institute 2011

<http://lens.auckland.ac.nz>



LIGGINS INSTITUTE
THE UNIVERSITY OF AUCKLAND
NEW ZEALAND

Te Whare Wānanga o Tāmaki Makaurau



NATIONAL RESEARCH CENTRE FOR
GROWTH AND DEVELOPMENT

Acknowledgements



The authors are grateful to the following organisations for support in the development, presentation and trial of this LENScience programme.



Tamaki College



Onehunga High School



Diabetes: An Issue for My Community

This presentation is designed to provide students with an overview as they start their learning in the unit '*Diabetes – an issue for my community*' and support them as they work towards the completion of Biology 1.2 Achievement Standard 90926v1 – report on a biological issue.

Target Group: Year 11

Images in this presentation are either:

- used under license from istockphoto.com
- or are original images owned and created by the Liggins Institute.

LENScience Diabetes © Liggins Institute 2011

<http://lens.auckland.ac.nz>



What is Diabetes?



What is Diabetes?

Diabetes is a disease that occurs when we have too much glucose (sugar) in our blood.

Why is Diabetes an issue for my community?



Rates of Type 2 Diabetes in NZ

(Ministry of Health Statistics)

1 in 4 Māori and Pacific New Zealanders will be diagnosed with Type 2 diabetes in their life time.



Rates of Type 2 Diabetes in NZ

(Ministry of Health Statistics)

1996	2006	Predicted 2011
80,000 adults	120,000 adults	150,000 adults



Rates of Type 2 Diabetes in NZ

(Ministry of Health Statistics)

There are as many people again who have diabetes but are unaware that they have it!



Rates of Type 2 Diabetes in NZ

(Ministry of Health Statistics)

Adults living in poorest neighbourhoods are more than twice as likely to have diabetes than adults living in wealthier neighbourhoods.



Rates of Type 2 Diabetes in NZ

(Ministry of Health Statistics)

One-third of the increase in the incidence of diabetes is due to obesity.



Rates of Type 2 Diabetes in NZ

(Ministry of Health Statistics)

But, even if all the programmes to reduce obesity are successful, the number of New Zealanders with diabetes would still increase.





What is the cost?

For 2006/2007, the healthcare costs for New Zealanders with Type 2 diabetes was around **\$540 million.**





What is the cost?

If unchecked, it is predicted to increase to **\$1.78 billion** by 2021, or 15% of the governments health budget.



What is Diabetes?

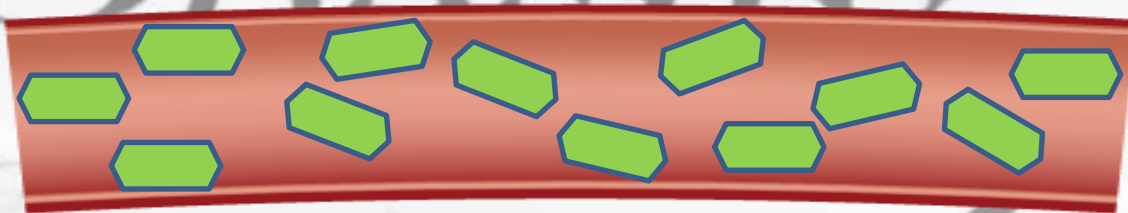
Diabetes

pancreas food Overw

Obesity

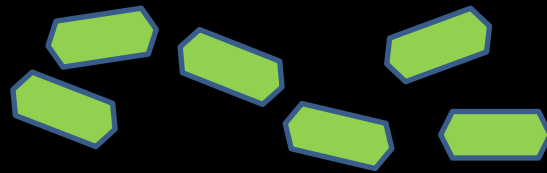
What is Diabetes?

Diabetes is a disease that occurs when we have too much glucose (sugar) in the blood.

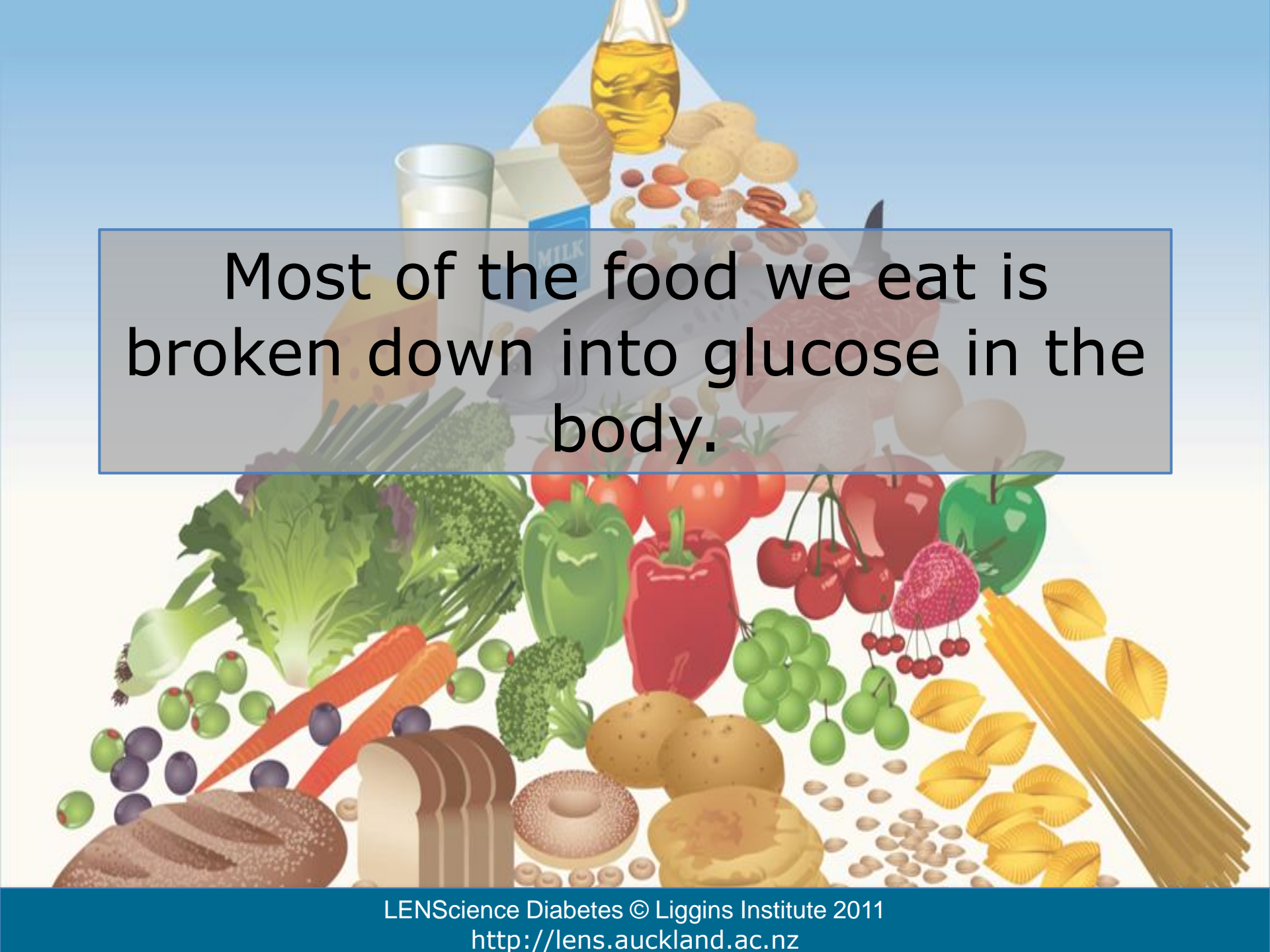


What is glucose?

Glucose is the main source of energy for the bodies cells.

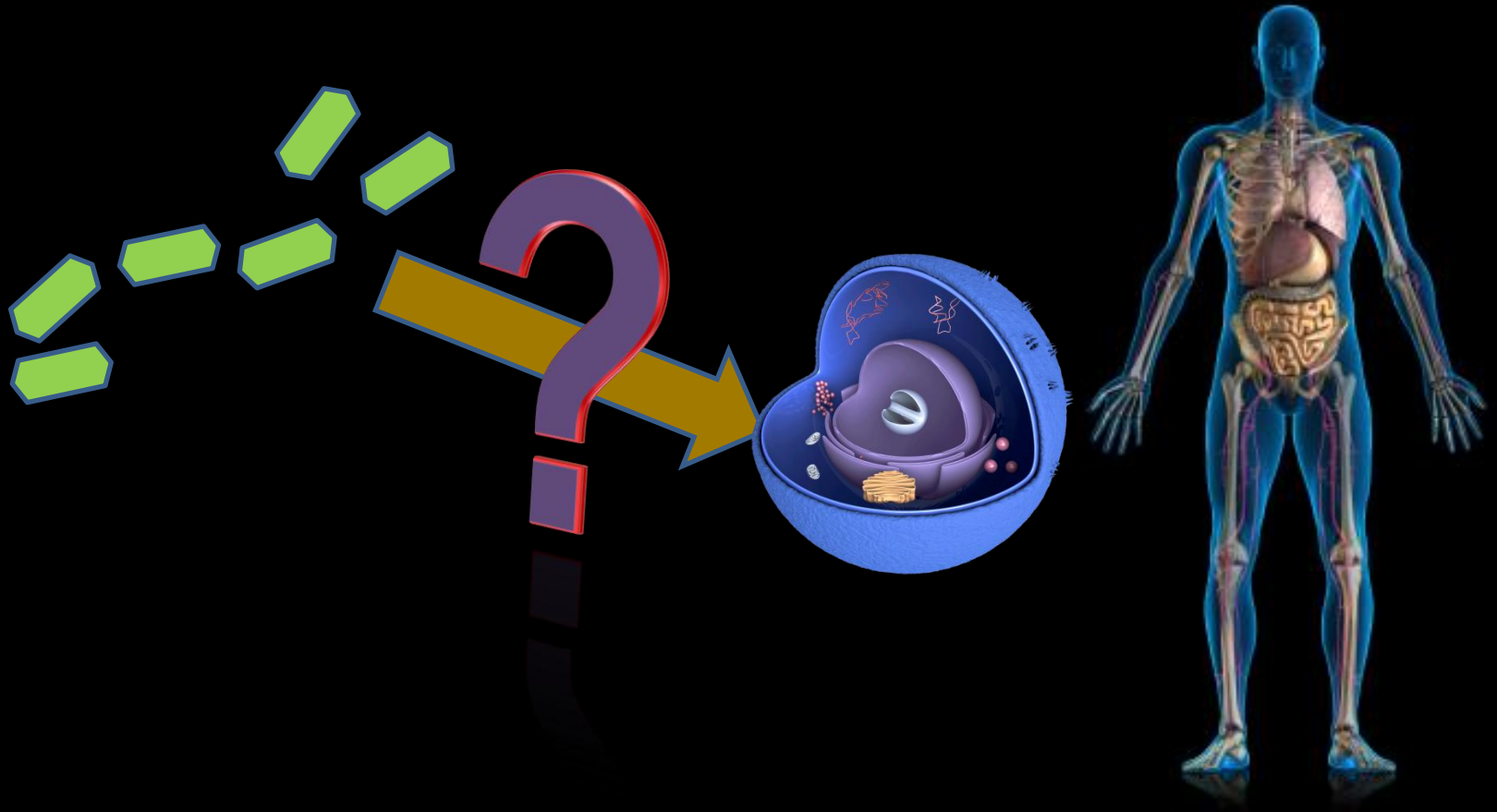




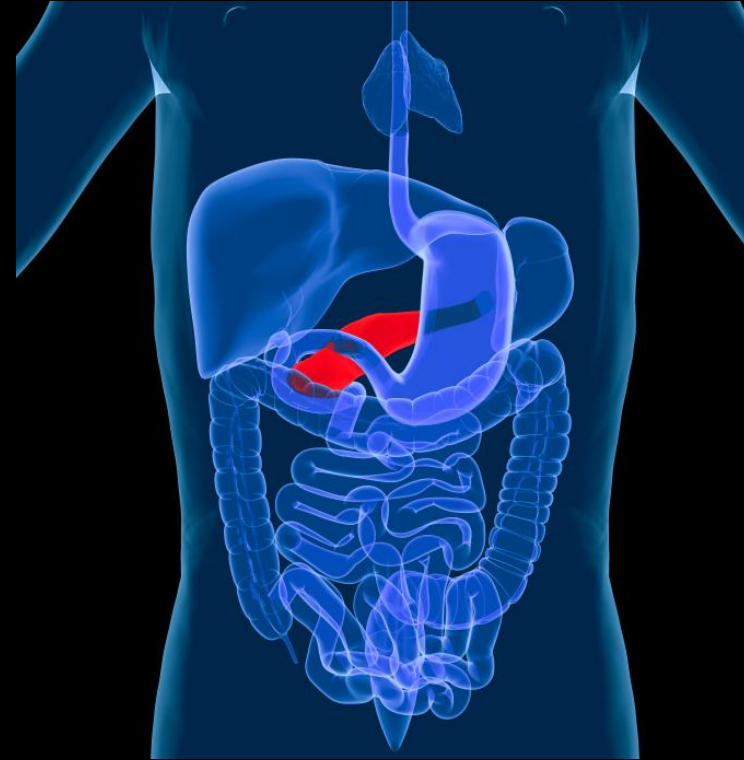
A vibrant collage of various food items. At the top, there's a glass of milk, a carton of milk, a bottle of oil, and some bread. Below these are various fruits like apples, grapes, and berries, and vegetables like broccoli, carrots, and bell peppers. There are also grains like corn and wheat, and some nuts. A central text box with a blue border contains the text: "Most of the food we eat is broken down into glucose in the body."

Most of the food we eat is broken down into glucose in the body.

How does glucose get into your bodies cells?



A chemical called insulin is produced in the pancreas and its job is to help glucose move into the cells.



Types of diabetes

The cells of a person with diabetes have problems taking up glucose due to either:

1. a lack of insulin → Type 1 diabetes
2. the insulin cannot work properly
(insulin resistance)
→ Type 2 diabetes.

Type 1 Diabetes

- Insulin cannot be made by the pancreas
- Commonly seen in children and young people
- Insulin injections are essential
- A healthy diet is also essential.



Type 2 Diabetes

- The pancreas is still making insulin BUT the insulin is not working
- Even more insulin is made – person becomes INSULIN-RESISTANT
- Commonly seen in older people
- Obesity and inactivity are major contributors to Type 2 diabetes.



Treatment for Diabetes

Before 1922, babies born with Type 1 diabetes usually died before the age of 1. This changed with the discovery of insulin in 1922.

Treatment for Diabetes

To lower the level of glucose in the blood:

- Type 1 diabetics MUST have insulin injections
- Some Type 2 diabetics also need insulin injections.



Treatment for Diabetes

To lower the level of glucose in the blood:

- Type 1 diabetics MUST have insulin injections
- Some Type 2 diabetics also need insulin injections
- Eat foods or exercise which will lower the levels of glucose in the blood.



Treatment for Diabetes

To lower the level of glucose in the blood:

- Type 1 diabetics MUST have insulin injections
- Some Type 2 diabetics also need insulin injections
- Eat foods or exercise which will lower the levels of glucose in the blood
- Type 2 diabetics may take tablets that help insulin production.





DIABETES:



An Issue For My Community





DIABETES:



Why is this happening?







A combination of factors can cause or influence the risk of diabetes



Risk Factors for Type 2 Diabetes include:

Risk Factors for Type 2 Diabetes include:

- Heredity – runs in the family



Risk Factors for Type 2 Diabetes include:

- Heredity – runs in the family
- Life style



Risk Factors for Type 2 Diabetes include:

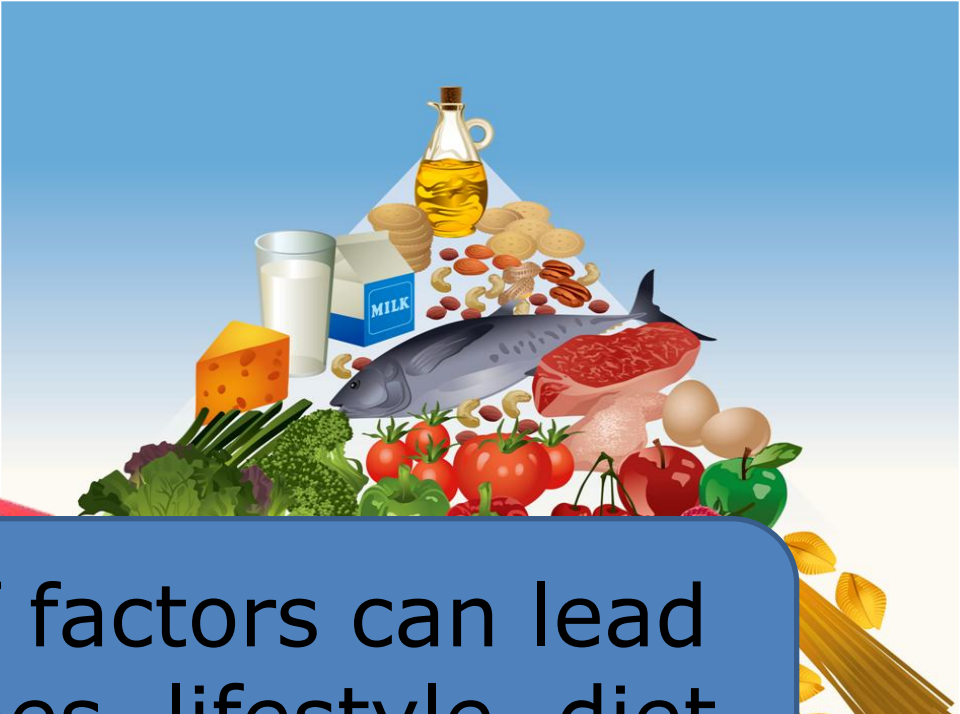
- Heredity – runs in the family
- Life style
- Diet



Risk Factors for Type 2 Diabetes include:

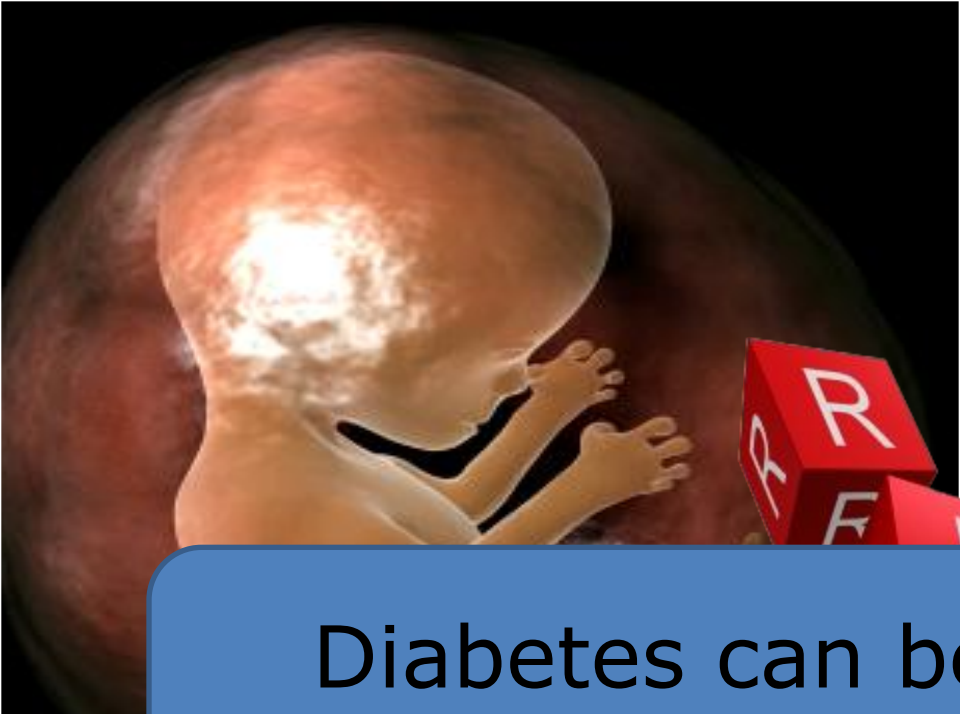
- Heredity – runs in the family
- Lifestyle
- Diet
- Early-life environment.





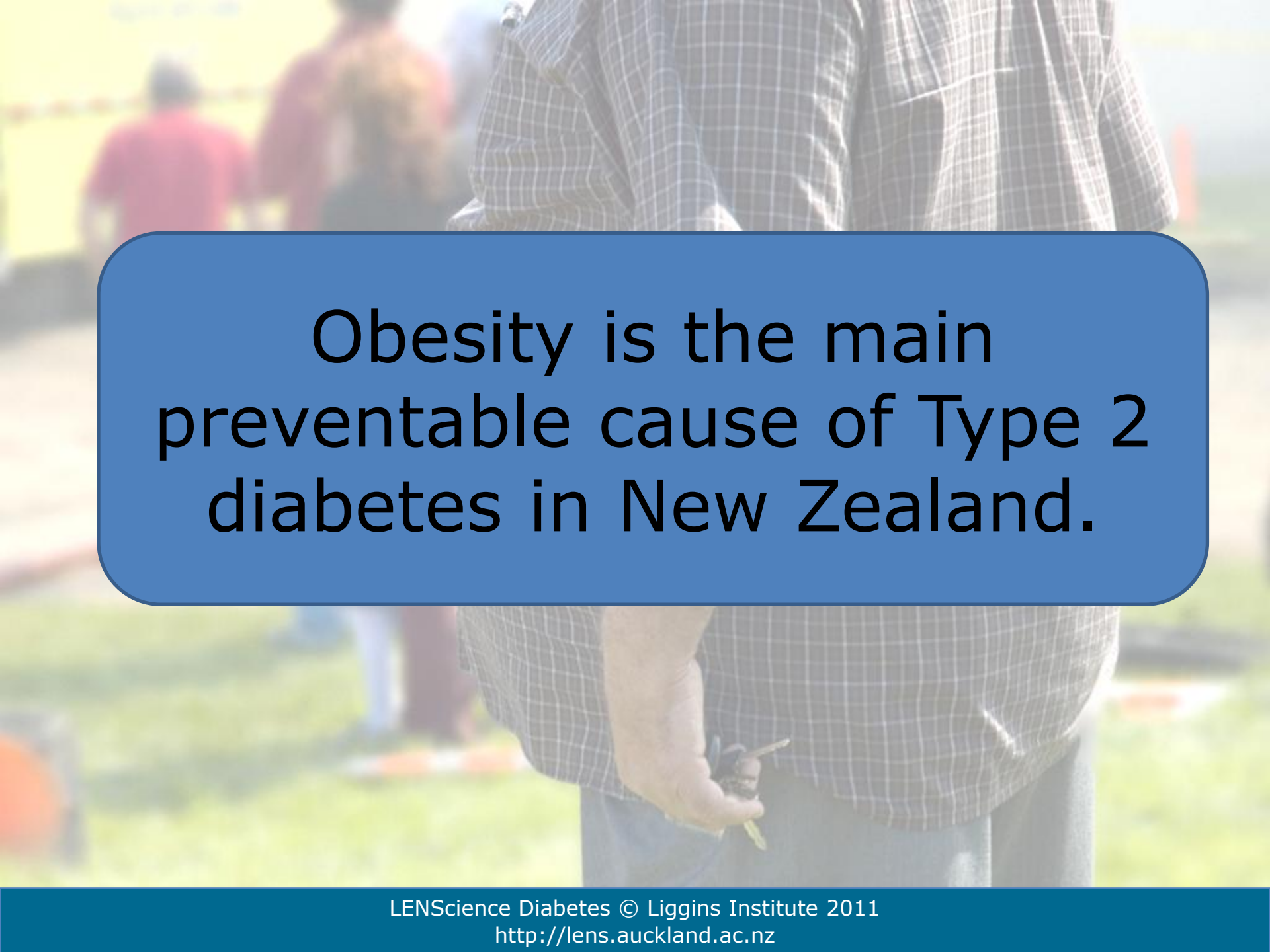
A combination of factors can lead to diabetes – genes, lifestyle, diet and early-life environment.





Diabetes can be prevented by modifying the risk factors.





Obesity is the main
preventable cause of Type 2
diabetes in New Zealand.

Food and Activity



Healthy Balance

Food and Activity



A balance is needed between the energy you put into your body and the energy you expend.



Healthy Balance



Healthy Start to Life

**Our early-life environment
affects our risk of
developing obesity and
Type 2 diabetes as an adult.**

Healthy Start to Life

Our early life affects our

Mothers eating a healthy diet during pregnancy can reduce the risk of their children developing obesity and Type 2 diabetes when they grow up.